

RADAR STATION B-71, POWER BUILDING
Redwood National Park
Coastal Drive
Klamath vicinity
Del Norte County
California

HAER CA-332-A
CA-332-A

PHOTOGRAPHS

WRITTEN HISTORICAL AND DESCRIPTIVE DATA

FIELD RECORDS

HISTORIC AMERICAN ENGINEERING RECORD

National Park Service
U.S. Department of the Interior
1849 C Street NW
Washington, DC 20240-0001

HISTORIC AMERICAN ENGINEERING RECORD

RADAR STATION B-71, POWER BUILDING

HAER No. CA-332-A

LOCATION: Redwood National and State Parks, Coastal Drive, Klamath vicinity, Del Norte County, California
UTM: 10.410090.4597050

DATE OF
CONSTRUCTION: ca. 1942

BUILDER: Unknown, civilian construction company contracted by War Department

SIGNIFICANCE: The Power Building housed the generators that powered the radar station. The building's true purpose was effectively disguised from casual passersby and enemies by its location on a terrace about 100' below the Coastal Drive and by board and batten siding and architectural details that made it look like other local farm buildings. Despite being abandoned since the end of World War II and suffering from poor environmental conditions (namely dampness), the Power Building retains its integrity and remains part of one of the few remaining radar stations in the United States.

HISTORIAN: Justine Christianson, HAER, 2005

PROJECT
INFORMATION: The Radar Station B-71 Recording Project was a cooperative effort between the Historic American Engineering Record (HAER), part of Heritage Documentation Programs (Richard O'Connor, Acting Manager), Redwood National and State Parks (William Pierce, Superintendent), and the Pacific West Regional Office (Stephanie Toothman, Chief, Cultural Resources). Karin Anderson, Cultural Resources Program Manager for Redwood National and State Parks, facilitated the project. James O'Barr, Museum Curator, provided access to the site and assistance with the equipment. Justine Christianson and Kristen O'Connell, HAER Historians, did the fieldwork, and Justine Christianson wrote the historical report. Jet Lowe, HAER Photographer, produced the large format photography.

For an overview of the site, see Radar Station B-71 (HAER No. CA-332). For more information on the other extant building, see Radar Station B-71, Operations Building (HAER No. CA-332-B).

INTRODUCTION

Constructed around 1942, the remote Radar Station B-71 is located on a terrace about 3/4 of a mile from the mouth of the Klamath River near the towns of Requa and Klamath. The Coastal Drive, also called the Klamath Beach Road, accesses the site and runs parallel to the Pacific Ocean along a ridge. The flat terrace, sited about 100' west of and below the Coastal Drive, drops off to the Pacific Ocean. It provided a sizable strip of land on which the radar operations could take place. A narrow, rather steep footpath that runs from a pull off on the side of the Coastal Drive to the terrace provides the only access to the buildings.¹ The location of the site as well as the vernacular construction of the buildings helped disguise its use from the local residents and enemy spies. Constructed of durable concrete blocks, the buildings were clad in board and batten siding and had architectural features reminiscent of local farm buildings. As First Lt. Dale Birdsall, Station Commander, remembered in 1988, the complex was "painted in earth tones, was not landscaped, and looked very much like the conventional coastal farm house in that area." In fact, he stated "the site was somewhat patterned after the Chapman ranch which had a farm house to the north of the site and from whom the War Department (or Defense Department) leased the land."² Camouflaging the buildings was essential to maintaining the secrecy of the site since the radar station complex was part of a coastal defense system designed to protect the nation's coast and adjacent territories and bases against enemy attack by land, air or sea.

DESCRIPTION OF CURRENT CONDITIONS³

The Power Building and the Operations Building (see HAER No. CA-332-B) are the only two structures remaining from Radar Station B-71. From the Coastal Drive, only the tops of these two buildings are visible; the Power Building lies to the south while the Operations Building is at the north. Both have wood shingled roofs and board and batten siding to make them less conspicuous features of the landscape. The Power Building, which measures approximately 38' along its front elevation and 22' wide with an approximately 14' x 15' addition on the north end, has been disguised as a farmhouse. Two false dormer windows on the front (west) elevation overlook the sea. The dormers have wood siding and shingled front gabled roofs with bargeboards on the front and eaves on the sides, mimicking the form of the side gables of the main roof. The dormer windows have no functional purpose aside from camouflage, as evidenced by the fact that the shingled roof covering the building can be seen intact through the glass windows. Another camouflaging technique used in both the Power Building and the Operations Building is the board and batten siding that masks the concrete block construction. A

¹ Suzanne Baker and James Roscoe, Archaeology Consultants, Oakland, CA, Archaeological Site Record, April 4, 1983, World War II Observation Post vertical file, located in Redwood National and State Parks, South Headquarters, Library, Orick, CA, hereafter cited as REDW; Gordon Chappell, "Radar Station B-71," National Register of Historic Places Inventory Nomination Form, June 7, 1977, listed 1978, Item Number 7, Page 1.

² Letter, Dale Birdsall to Richard (Dick) Rasp, October 17, 1988, located in World War II Observation Post vertical file, REDW.

³ Description based on author's site visit, May 2005.

Classified Structure Field Inventory Report completed for the National Park Service noted that the siding was redwood.⁴ The front elevations of both buildings are missing their siding, leaving the concrete block construction exposed. The other walls, however, have either reconstructed or original siding, which was attached to the concrete block by thick furring strips. The National Register nomination attributes the missing siding to local residents salvaging the wood after the radar station reverted back to landowners E.H. and A. Chapman.⁵

On the south and north gable ends of the Power Building, the concrete block walls and siding do not extend to the gable. This is indicated by changes in the siding. The furring strips caused the siding to protrude several inches from the actual 1'-9" thick concrete block wall, especially when compared with the siding on the gable ends, which was attached directly to the framing. In order to mask the resulting discrepancy between the two, a horizontal board was placed at a 45-degree angle at the point of transition.

The south wall features two false "windows" at each end that are merely openings in the siding and not in the concrete block wall. Wood trim delineates the two window openings. Just above the horizontal board that marks the transition from concrete block wall to the framing of the gable are three vent holes. Bounded by metal flashing, the holes are not evenly spaced, and their original purpose is unknown, although it can be deduced that given the equipment housed inside, some sort of ventilation would have been necessary. A square vent is also located at the peak of the gable on both the south and north walls and was probably also for ventilation purposes, given the building has no real windows. As with the dormer windows, bargeboards delineate the gables.

The east wall features a doorway at the south end that Redwood National and State Parks personnel sealed with a plywood door painted black. A site plan for the Power Building indicates that in April 1983, park personnel decided not to reconstruct a shed roof over this door since it was probably an addition.⁶ Also along the east wall are three false windows trimmed in wood like the rest of the false windows on the building. Since the east wall faces the slope that drops down from the Coastal Drive, it has experienced both moisture and mud damage from rainy conditions, natural springs, and the natural flow of water across the site. Moisture damage can be seen near the doorway at the southeast corner where the siding has begun to rot.

The north wall features an addition extending across nearly three-quarters of its length. The date of this addition is unknown, although the National Register nomination speculates it is post-war.⁷

⁴ K. Keane, Classified Structure Field Inventory Report, South Building, World War II Observation Post, November 19, 1975, in World War II Observation Post vertical file, REDW.

⁵ Chappell, "Radar Station B-71," Item Number 8, Page 3. Edie Butler, Special Collections Librarian at Humboldt State University, found the lot on which the radar station is located on Metsker's Atlas of Del Norte County, California (Tacoma, WA: Metsker Maps, ca. 1949).

⁶ World War II Radar Station Power Building floor plan, World War II Radar Station File, REDW, ca. 1983.

⁷ Chappell, "Radar Station B-71," Item Number 7, Page 2.

The addition features a shed roof supported by two wood posts that extend beyond its walls, creating an overhang. As with the main structure, the addition's roof is wood shingled and the walls are of board and batten siding. Two doorways, one on the north wall and one on the east wall, provide access to the addition's interior. The remaining quarter of the north wall not covered by the addition has a false window. The concrete block wall visible through the window opening is cracked.

The topography of the site has negatively impacted the Power Building's exterior condition and created a conservation challenge. Since it is situated on a terrace located below a ridge in a wet climate, runoff and erosion from the east and south have caused mud to be deposited against the structure. The constant moisture has also damaged the remaining siding in some areas (like the southeast corner). Immediately to the south, north, and rear (east) walls, a trench was dug around the structure to keep soil from pushing against the building and causing further cracking in the concrete block walls. A rock wall also appears to have been constructed at the rear of the building to hold back the earth, but it is difficult to see due to a covering of moss and other vegetation.

The Power Building's interior contains few clues as to what activities took place inside. The addition, which has a dirt floor and board and batten siding matching the rest of the exterior, provides access to the first room of the building via a plywood door. This doorway opening measures 6'-10" and is framed with wood. It has been closed in with a plywood door and a window on the west side and a doorway on the east. Timber framing separates the two. The space underneath the window has been filled with vertical siding rather than concrete block, indicating an alteration in original intent.

The first room of the Power Building, which measures approximately 7' wide by 17' long, has concrete block walls and a dirt floor. There is severe cracking on the north wall immediately adjacent to the entrance doorway. A great deal of graffiti, painted over by the park, covers the walls. A 7'-1" opening on the southeast wall of this room accesses the main room of the Power Building. There is a step up at the threshold from the first room to the main room since the flooring is different. Unlike the first room, the main room has a concrete slab floor, presumably since this was where the equipment was housed. Inset into the floor are troughs that have been covered with boards, which were probably for routing electric lines and cables for operating the power equipment. Another, less plausible, suggestion is that the troughs served as water drains given the wet conditions of the site. The placement of the troughs in a grid like pattern rather than running from one side to the other also supports the conclusion that the troughs helped route cables. The main room features two windows on the south end. These open to a narrow room between the interior concrete block wall and the exterior concrete block wall and do not match the location of the exterior false windows. The interior windows are set about 4' from each end and are trimmed in wood. Their purpose is unknown since they do not actually open to the outside, but they could have been for ventilation purposes since the building housed motors and the exterior wall features vent openings. Both the entrance room and the main room have exposed rafters and ceiling beams that were at one time covered with ceiling tiles.

ALTERATIONS

In order to stabilize the building and protect it from vandalism, the National Park Service has made some alterations to the Operations Building. There is a lack of information about the radar station complex's history between the end of World War II and the National Park Service's acquisition, although the property did revert back to E.H. and A. Chapman, the original owners. The first available description of the Power Building dates from a 1975 Classified Structure Field Inventory Report. Unfortunately, no photographic evidence has been found to date of the complex from the time of its construction to the 1970s.⁸ The lack of early documentary evidence is no doubt due in part to the secrecy in which radar stations operated. Rehabilitation of the buildings during the National Park Service's era of ownership, however, has been well documented. Undoubtedly, the buildings suffered from environmental damage (such as mudflows), vandalism, and benign neglect prior to their inclusion in Redwood National Park, which was established in 1968. By 1978, the park had begun considering stabilization measures for the radar station complex. Robert Cox, Historical Architect for the National Park Service's Western Region, made a site visit to the complex and created a list of tasks necessary to stabilize both the Power and Operations buildings. His specific recommendations for the Power Building included reroofing the shed addition on the north wall and installing posts to support its overhang; reattaching existing siding on the east and south walls; patching the roof and replacing the main ridge boards; covering the trenches cut into the concrete slab floor; and repairing the "burned out" interior trusses with new timber. He advised against replacing the siding on the west wall until "photographic evidence of what the building looked like historically" could be found.⁹ Cox also recommended site work to help preserve the buildings, including removing the soil deposited by mud flows along the north, east and south walls; regrading the site; and installing a drainage system to route water away from the structure to prevent further deterioration.¹⁰ Rebecca Stevens, Historical Architect for the Western Regional Office, echoed many of these recommendations in her 1985 memorandum regarding rehabilitation of the Operations Building.¹¹

⁸ On February 11, 1977, the Department of the Army, U.S. Army Audio-Visual Agency wrote to Gordon Chappell in response to his query about historic photographs that none were available showing the radar station. The Albert F. Simpson Historical Research Center, USAF, HOF Maxwell Air Force Base in Alabama also did not have photographs of radar sites, World War II Observation Post, vertical file, REDW. Searches of appropriate records in the National Records and Archives Administration, College Park, Maryland, by this author have not yielded information on this specific site either.

⁹ Memo from Robert Cox, Historical Architect, Western Region, to Tom Mulhern, Chief, Cultural Resource Management, Western Region, re: stabilization of radar station, visit to site July 26, 27, 1978, dated July 31, 1978, World War II Observation Post vertical file, REDW.

¹⁰ Memo, Cox to Mulhern re: stabilization of radar station.

¹¹ Memo from Rebecca L. Stevens, Historical Architect, Western Regional Office, to Chief of Maintenance, Redwood National Park, re: WWII Radar Station, Treatment for North Building, April 29, 1985, World War II Observation Post vertical file, REDW.

In November 1984, the National Park Service determined that the radar station complex should have priority in the Cyclic Maintenance Cultural Needs system in order to stabilize the structures, suspend further deterioration, and decrease safety issues. The work to be done on the site was put in prioritized order. The most important task was improving site drainage, followed by removing asbestos insulation, reroofing the Operations Building, reattaching any remaining siding to the buildings, clearing overgrowth while maintaining historic vegetation, restoring the deteriorated north wall of the Operations Building, and finally, “overlaying the conduit raceways in both buildings to reduce safety hazards.”¹²

Rebecca Stevens, Historical Architect for the National Park Service’s Western Regional Office, in a 1985 memorandum to the Chief of Maintenance at the park, outlined the precept of the rehabilitation plan. She noted that according to the National Register nomination, the exterior of the building was significant, not the interior. As a result, she emphatically stated, “the site should be preserved in its late 1960’s -- early 1970’s condition. The building was not in ‘mint condition’ at that time. Second it should be protected from weather, deterioration and vandalism. In addition to preserving and protecting, a relatively hazard-free site should be provided to the public.”¹³ The Chief of Maintenance at Redwood echoed these statements to the park, noting “the intent of the rehabilitation is to basically make the facilities more accessible to the public, to make the public more aware of what they were, and to preserve the units for future generations at the level of approximately 1968-1970.”¹⁴

By 1985, the park had developed a rehabilitation plan for the site following Stevens’ recommendations. The issue of drainage was perhaps the most important component to stabilizing the buildings and required a number of strategies. Suggestions for improvements included: adding culverts and cleaning existing culverts alongside the Coastal Drive; adding rain gutters to the structures; excavating sediment deposits from around the buildings and building surface drains; regrading; and installing drainage channels at the bottom of the road, between the buildings and north of the Operations Building.¹⁵ A site visit in 2005 showed that the rain gutters were never added to the building, presumably because they were not an original feature. Sediment has been excavated from around the Power Building and a drainage channel dug between the Power and Operations buildings. Despite the development of strategies to ameliorate the drainage problem, the site has consistently suffered from moisture, as evidenced

¹² Memo from Associate Regional Director, Resources Management and Planning to Superintendent, Redwood, dated November 13, 1984, World War II Observation Post vertical file, REDW. The troughs in the floor are also referred to as “wire ways.” See Joe Lusa, Chief of Maintenance, Priorities of WWII Buildings, May 5, 1985, World War II Observation Post vertical file, REDW.

¹³ Memo, Stevens to Chief of Maintenance, underlining in original.

¹⁴ Lusa, Priorities of WWII Buildings.

¹⁵ Memo from Supervisory Geologist Ken Utley to Archaeologist re: Observations & Recommendations, dated May 14, 1985, World War II Observation Post vertical file, REDW.

in a 1995 park memo discussing water ponding on the site and a 2005 site visit indicating several wet areas.¹⁶

The park also studied the Regional Office's recommendation to remove overgrowth while balancing the need to maintain the historic setting of the site. Dale Birdsall remembered from his tour of duty that the natural environment had to be maintained for camouflage purposes, so the "trees and shrubs were left as much in the natural state as the installation demands would permit."¹⁷ Redwood's plant ecologist noted in 1985, "the vegetation surrounding the observation post is primarily a mosaic of coastal prairie and coastal scrub," the predominant species of which included "non-native perennial grasses (especially orchard grass and velvet grass)" and "coyote brush and salmonberry (both natives)." The two methods of dealing with the non-native species and "restoring the historic setting of the World War II era (other than bringing back the livestock)," according to the ecologist, were burning or mowing. Of the two, the ecologist recommended burning.¹⁸

By 1987, the park had begun rehabilitating the site. The work was to proceed "in keeping with NPS and National Register policy," specifically that "a full restoration of the buildings will not be undertaken. Rather, we will repair/restore portions of the exteriors of both structures since the exterior appearance was one of the important and unique features of the site and so that the visitor may have a sense of what the buildings looked like when in use and when the park assumed ownership."¹⁹ Particular attention was paid to the north end of both buildings since that was visible from the interpretive sign placed on the Coastal Drive. The park's Building and Maintenance Foreman, Cletis Rodgers, directed the work with Chuck McKinney, Carpenter from the California Conservation Crew, using cyclic maintenance funds and fee monies. The work included reconstructing the shed addition on the north end of the Power Building and securing the building from vandals by constructing an entrance door and blocking the window immediately adjacent to that with wood, which is visible today. Workers repaired the dormers on the front elevation but did not reattach any siding to the front since documentary evidence regarding its appearance was lacking. On the remaining elevations, the siding was reattached, and false windows constructed using photographic evidence from the 1970s and stains on the concrete block walls. McKinney noted, "the construction detail was followed whenever possible except for the addition of supports nailed into the side of the concrete blocks to hold up walls (original construction inadequate), and framing around the windows (rough sills and headers did

¹⁶ Memo from Barry Hall, Chief Geologic Services Branch to Archaeologist, Chief R&RM, Buildings and Utilities Foreman, Roads and Trails Foreman, and Chief, Fish and Wildlife Branch, dated May 19, 1995, located in World War II Observation Post vertical file, REDW.

¹⁷ Letter from Birdsall to Rasp.

¹⁸ Memo from Mary M. Hektner, Plant Ecologist to Archaeologist re: Vegetation in Area, dated May 23, 1985, World War II Observation Post vertical file, REDW; Memo from Mary M. Hektner to Archaeologist, in World War II Observation Post vertical file, REDW.

¹⁹ Memo from Ann Smith, Archaeologist to Buildings and Utilities Foreman, Roads and Trails Foreman through Chief, Technical Services and Chief, Maintenance dated July 8, 1987, located in World War II Observation Post vertical file, REDW.

not extend to adjacent studs). Both alterations do not change the exterior appearance.”²⁰ Although the historic appearance of the Power Building may never be determined, its current condition reflects its appearance in the late 1960s-1970s when the National Park Service acquired the building, and it is actually probably fairly close (at least on the exterior) to its original appearance.

FUNCTION

Little information could be found on the Power Building’s use specifically and radar station functions in general. As its name implies, the Power Building housed the machinery necessary to power the radar equipment. Dale Birdsall indicated that two Caterpillar Diesel M6 sets of approximately 40 kilowatts each powering electrical generators were kept in the building. Originally the station operated with SCR-270-B portable radar set, “powered by LeRoi gasoline engines which had a habit of pump failure and fans going through radiators” causing “prolonged shutdowns.” The Caterpillar units replaced the earlier ones and “proved to be more reliable.”²¹ The generators powered the radar equipment housed in the Operations Building.

CONCLUSION

The Power Building is one of two extant buildings on the site of the former Radar Station B-71. Disguised as a vernacular farmhouse and nestled onto a terrace overlooking the Pacific Ocean, this rather unremarkable building contributed to the defense of the coastal United States. Despite standing empty since the end of World War II, the building retains its integrity and is a contributing element to one of the few remaining radar stations in this country.

²⁰ Memo from Carpenter (Chuck McKinney) to Chief of Maintenance through Buildings and Utilities Foreman, re: Rehab of Site, dated August 1, 1988, World War II Radar Station vertical file, REDW.

²¹ From questionnaire on history of Radar Station B-71 during World War II from Gordon Chappell to Dale Birdsall, September 27, 1982, World War II Radar Station vertical file, REDW.

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Site visit, May 2005.

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